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60,446-248; 03ZFM024/004

UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Sayman
Serial No.:	10/668,514
Filed:	9/23/2003
Title:	**Warning Algorithms for Vehicle Driveline Failures**

M/S AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPEAL BRIEF

Dear Sir:

Appellant now submits its brief pursuant to the Notice of Appeal filed October 28, 2005. Fees in the amount of $500.00 for the Appeal Brief fee may be charged to Deposit Account No. 50-1482 in the name of Carlson, Gaskey & Olds. If any additional fees are necessary, you are hereby authorized to charge the same deposit account number.

Real Party in Interest

The real party in interest is the transmission division of ArvinMeritor, Inc. Several name changes and assignments have been recorded. Appellant will provide the current name of the transmission entity in the Reply Brief.

Related Appeals and Interferences

There are no prior or pending appeals, interferences or judicial proceedings relating to this appeal, or which may directly effect, or be directly affected by, or have a bearing on, the Board's decision in this appeal.

Status of Claims

Claims 1-18 are all pending, rejected and appealed.

Status of Amendments

No amendments after final rejection have been submitted.

Summary of Claimed Subject Matter

This invention relates to warnings for vehicle drivelines, and in particular for clutches and transmissions. Independent claim 1 recites that a driveline include at least one of a clutch 24 or a transmission 26. A sensor determines an undesired condition at one of the clutch and transmission. The sensor communicates with a control. The control communicates with a primary warning device to provide a warning to an operator of the undesired condition. The control is operable to monitor the operation of the primary warning device and actuate a secondary warning device should an indication be received that the primary warning device has failed (paragraph 13, 14).

One example of a condition is high transmission temperature (paragraph 14). If this condition warrants, the secondary warning device could be audio 38 or visual 36 (paragraph 15).

As recited in independent claim 5, the secondary warning device can control operation of a vehicle driveline component. Dependent claim 6 recites that the secondary warning device could include actuation of one of the engine or vehicle brake (paragraph 16).

Dependent claim 7 recites that it is the engine which is controlled, and dependent claim 8 recites that it is the vehicle brake system which is actuated to provide the secondary warning device.

Dependent claim 9 recites that the sensor senses clutch slippage, and a primary warning device is provided to an operator to provide an indication of clutch slippage. If the primary warning device fails, then the secondary warning device is actuated (paragraph 17, Figure 3).

Independent claim 11 recites a clutch and a sensor for monitoring clutch slippage. A control receives a signal from a sensor indicating clutch slippage. The control communicates with a warning device to provide a warning to an operator of clutch slippage. The control is

operable to change the warning should the clutch slippage continue over time. As set forth in dependent claim 12, the frequency of the warning changes if clutch slippage continues to occur. Dependent claim 13 recites that the frequency increases if clutch slippage continues to occur over time. Dependent claim 14 recites that the increase in frequency only occurs if the clutch has an increasing temperature.

Independent claim 15 recites a method of providing a vehicle with a clutch and a transmission and monitoring the operation of at least one of the clutch and transmission and detecting an undesired condition. An indication is provided to a control of the undesired condition. The control sends a message to a primary warning device to provide a warning to an operator and also monitors operation of the primary warning device. The control actuates a secondary warning device if the control determines that the primary warning device has failed (Figure 2).

Independent claim 16 recites a method of monitoring the clutch for slippage and providing a warning should slippage be detected (Figure 3). The claim further recites a method of continuing to monitor the clutch for clutch slippage and changing the nature of the warning should the clutch slippage continue to occur. Dependent claim 17 recites that the warning has a frequency that increases if the clutch slippage continues to occur over time. Dependent claim 18 recites that the warning increases in frequency should the clutch have an increase in temperature.

Grounds of Rejection to be Reviewed on Appeal

A. Claims 1-4, 9, 10 and 15 stand rejected over U.S. Patent 6,125,316 to Sasaki, et al. taken with U.S. Patent 4,788,446 to Sterler, et al.

B. Claims 5-7 stand rejected under 35 USC §103 as being unpatentable over Sasaki, et al. in view of Sterler, et al., and further in view of U.S. Patent 5,992,599 to Hallenstvedt, et al.

C. Claim 8 stands rejected under 35 USC §103 as being unpatentable over Sasaki, et al. in view of Sterler, et al. and Hallenstvedt, et al., and further in view of U.S. Patent 4,131,036 to Ivey, et al.

D. Dependent claim 10 is not separately appealed although it is separately rejected.

E. Claims 11-13, 16 and 17 stand rejected over Sasaki, et al. taken with U.S. Patent 6,065,138 to Gould, et al.

F. Claims 14 and 18 stand rejected over Sasaki, et al. taken with Gould, et al. and further in view of U.S. Patent 4,488,140 to Lang, et al.

Arguments

A. The rejection of claims 1-4, 9, 10 and 15 over Sasaki, et al. and Sterler, et al. is contested.

These claims require that a control monitor a condition of a clutch or a transmission, and actuate a secondary warning should it be determined that a primary warning has failed, when that primary warning should be actuated to indicate an undesired condition.

Vehicle drivelines have been manufactured for around 100 years. Still, the examiner is unable to find this invention in the field of vehicle drivelines. The examiner relies upon a transition control (Sasaki, et al.) which actuates a warning when a shift in a transmission is detected as failing. The examiner is unable to find the concept of a secondary warning should that primary warning fail in the vehicle driveline art. Instead, the examiner turns to the Sterler, et al. patent, which utilizes a secondary warning for an airbag system. A warning light is provided on an airbag trigger circuit that provides an indication that the airbag is defective. However, the warning light is provided with power through the same fuse as is the trigger circuit. Thus, should that fuse fail, not only would the trigger circuit for the airbag not be effective, but the warning light would also not be effective. Given this common power, Sterler, et al. provides a way to separately power a secondary warning signal.

Sterler, et al. would not propose modifying Sasaki, et al. as proposed by the examiner. Sasaki, et al. does not utilize a single power circuit to power its transmission shifts or its clutch, as

well as its warning light. The warning light is separately actuated from the transmission control. Sterler, et al.'s problem would not be experienced by Sasaki, et al., and Sterler, et al. would not suggest any modification to Sasaki, et al. As such, there is no suggestion to combine these references, and the claims are all allowable.

B. The Rejection of Claims 5-7 is Separately Contested.

Claim 5 is rejected over Sasaki, et al. taken with Sterler, et al., and further combined with Hallenstvedt, et al. Hallenstvedt, et al. is relied upon by the examiner to show an engine cut-off device when a fault is detected. However, the types of faults that are detected in Sasaki, et al. are quite distinct from that which is responded to in Hallenstvedt, et al. As such, there is no suggestion to stop operation of the engine of Sasaki, et al. taken with Hallenstvedt, et al. Essentially, the examiner is relying on an indication of a failed shift in Sasaki, et al. However, Hallenstvedt, et al. would not truly suggest modifying Sasaki, et al. as proposed, and certainly would not suggest stopping the engine of Sasaki, et al. Hallenstvedt, et al. relates to a marine engine, and thus might well determine that stopping its engine is acceptable under certain conditions. Those conditions may not be acceptable in Sasaki, et al.

Notably, the examiner's proposed "suggestion to combine" is merely a restatement of the proposed combination. There is no true suggestion to combine.

C. The Rejection of Claim 8 is Separately Contested.

To reject claim 8, the examiner takes Sasaki, et al., Sterler, et al., Hallenstvedt, et al., and then adds in Ivey, et al. to suggest actuating a brake. However, Ivey, et al. does not overcome the deficiencies in the three base references as discussed above, and further does not suggest actuating a brake so as to provide a warning. Rather, Ivey, et al. appears to actuate a brake as a

control function. Simply, the function of Ivey, et al. is so distinct from any warning in the above references so as to not suggest anything.

Here again, the examiner's proposed suggestion is merely a restatement of the proposed combination.

D. The Rejection of Claims 11-13, 16 and 17 Over Sasaki, et al. Taken With Gould, et al. is Improper.

The examiner takes the transmission and clutch control of Sasaki, et al. and combines them with the Gould, et al. patent. Gould, et al. is alleged by the examiner as teaching changing a warning over time if a problem is not corrected. However, Gould, et al. is from the personal computer, or work station art. Here again, the examiner is unable to find any prior art in the vehicle driveline area, despite vehicle drivelines being manufactured for approximately 100 years.

Gould, et al. discloses a method of preventing a typist from working at a keyboard for an undue length of time. As such, rest periods are periodically scheduled. If the worker does not take advantage of these rest periods, then a warning signal will change in intensity.

First, the field of computer keyboards, and worker attention periods at those keyboards is so unrelated to the transmission control of Sasaki, et al. as to make the two non-analogous. Second, what the examiner is proposing is taking this Gould, et al. reference which basically tells a worker to leave the computer, and utilizing it to try and tell a vehicle operator that attention should be directed to the clutch. Simply, there is no proper suggestion here.

Again, the examiner's proposed suggestion to combine is simply a restatement of the combination. There is no true suggestion to combine based on this art, and the rejection is solely based on hindsight.

E. Claims 14 and 18 are Separately Contested.

These claims require the examiner to add in the Lang, et al. patent. Lang, et al. monitors clutch temperature. However, Lang, et al. does not overcome the deficiencies in the base rejection of Sasaki, et al. taken with Gould, et al. Moreover, to take temperature, and to increase the frequency of the warning in response to an increase in temperature is simply not suggested by Lang, et al. Lang, et al. does not tie its temperature sensing into any change in a warning. Simply, this rejection is based solely on hindsight.

CLOSING

For the reasons set forth above, the rejection of all claims is improper and should be reversed.

Respectfully submitted,

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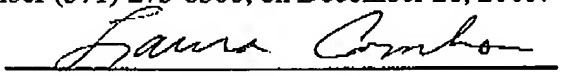
Dated: December 28, 2005

CERTIFICATE OF TRANSMISSION UNDER 37 CFR 1.8

I hereby certify that this correspondence is being facsimile transmitted to the United States patent and Trademark Office, fax number (571) 273-8300, on December 28, 2005.



Laura Combs

CLAIMS APPENDIX

1. A vehicle driveline comprising:

at least one of a clutch and transmission;

a sensor for determining an undesired condition at said at least one of said clutch and said transmission, said sensor communicating with a control, said control communicating with a primary warning device to provide a warning to an operator of a vehicle of said undesired condition; and

said control being operable to monitor the operation of said primary warning device and actuate a secondary warning device should an indication be received that said primary warning device has failed.

2. The driveline as set forth in Claim 1, wherein said vehicle driveline includes both a clutch and a transmission.

3. The driveline as set forth in Claim 1, wherein said secondary warning device is audio.

4. The driveline as set forth in Claim 1, wherein said secondary warning device is a visual warning.

5. The driveline as set forth in Claim 1, wherein said secondary warning device controls operation of a vehicle driveline component.

CLAIMS APPENDIX

1. A vehicle driveline comprising:

at least one of a clutch and transmission;

a sensor for determining an undesired condition at said at least one of said clutch and said transmission, said sensor communicating with a control, said control communicating with a primary warning device to provide a warning to an operator of a vehicle of said undesired condition; and

said control being operable to monitor the operation of said primary warning device and actuate a secondary warning device should an indication be received that said primary warning device has failed.

2. The driveline as set forth in Claim 1, wherein said vehicle driveline includes both a clutch and a transmission.

3. The driveline as set forth in Claim 1, wherein said secondary warning device is audio.

4. The driveline as set forth in Claim 1, wherein said secondary warning device is a visual warning.

5. The driveline as set forth in Claim 1, wherein said secondary warning device controls operation of a vehicle driveline component.

6. The driveline as set forth in Claim 5, wherein said secondary warning device includes actuation of one of an engine and a vehicle brake.

7. The driveline as set forth in Claim 6, wherein the operation of said engine is controlled to provide said secondary warning device.

8. The driveline as set forth in Claim 6, wherein a vehicle brake system is actuated to provide said secondary warning device.

9. The driveline as set forth in Claim 1, wherein said sensor senses clutch slippage, and said primary warning device is provided to the operator to provide an indication of said clutch slippage, and if said primary warning device fails, said secondary warning device is then actuated.

10. The driveline as set forth in Claim 9, wherein a pair of sensors sense engine speed and transmission input shaft speed to identify clutch slippage.

11. A vehicle driveline and warning system comprising:

a clutch, and a sensor for monitoring clutch slippage;

a control for receiving a signal from said sensor indicating a clutch slippage, said control communicating with a warning device to provide a warning to an operator of said clutch slippage; and

said control being operable to change said warning should said clutch slippage continue over time.

12. The system as set forth in Claim 11, wherein said control provides an increase in frequency of said warning if said clutch slippage continues to occur.

13. The system as set forth in Claim 12, where said increase in frequency occurs if said clutch slippage continues to occur over time.

14. The system as set forth in Claim 12, wherein said increase in frequency occurs if said clutch has an increasing temperature.

15. A method of providing a warning to an operator of a vehicle comprising the steps of:

(1) providing a vehicle driveline including a clutch and a transmission;

(2) monitoring operation of at least one of said clutch and said transmission, and detecting an undesired condition;

(3) providing an indication to a control of said undesired condition, and said control sending a message to a primary warning device to provide a warning to an operator, said control also monitoring operation of said primary warning device; and

(4) said control actuating a secondary warning device if said control determines that said primary warning device has failed.

16. A method of operating a clutch comprising the steps of:

(1) monitoring a clutch for slippage, and providing a warning should slippage be detected;

(2) continuing to monitor said clutch for clutch slippage, and changing the nature of said warning should said clutch slippage continue to occur.

17. The method as set forth in Claim 16, wherein said warning has a frequency that increases if said clutch slippage continues to occur over time.

18. The method as set forth in Claim 16, wherein a change in the nature of said warning is an increase in the frequency of said warning should said clutch have an increasing temperature.

EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None.